

REMARKS

Favorable reconsideration and allowance of this application are requested.

As a procedural note, the present amendment is being filed concurrently with a formal Request for Continued Examination (RCE) under 37 CFR §1.114. Accordingly withdrawal of the "finality" of the June 15, 2006 Official Action is in order so as to allow entry and consideration of the amendments and remarks presented herewith.

Independent claims 1 and 23 have been amended so as to further clarify the present invention and advance prosecution of the subject application. More specifically, independent claims 1 and 23 have been amended so as to specify the amine residue of the unit N X as a residue of certain compounds supported by the Examples, i.e., to a residue of a (poly)alkylenepolyamine, an imidazole compound, an isocyanuric acid, or a hydantoin compound, and to specify the salt of the guanamine compound as one forms one formed with a hydroxyl group-containing triazine compound.

Such amendments are based, for example, on page 9, lines 1 and 21, page 11, lines 8, 12 and 13, page 29, lines 12-13 and 20-21, and page 30, line 12 of the specification as well as the Examples therein.

In addition, obvious typographical errors that were inadvertently introduced into claims 19 and 20 by way of the last amendment have been corrected.

Accordingly, claims 1, 3-5, 9-12, 14-16 and 18-23 remain pending herein for which favorable reconsideration and allowance are requested.

I. Response to 35 USC §103(a) Rejection

(1) The Examiner's position

The Examiner newly cites Sakurai (USP 4,526,921) and Auerbach (USP 4,843,115) in addition to the four references that were cited previously in the official action dated December 30, 2005, namely JP2002-201334, JP2000-119485, JP1O-67942, and Harashina (USP 6,673,405). The Examiner asserts that the prior pending claims were unpatentable over Harashina and Sakurai in view of Auerbach, and further in view of Japanese Patents Nos. 2002-201334, 2000-119485 and 10-67942.

(2) Cited references

In order to prevent overburdening of the Official Record, the summaries of the formerly cited references have been omitted. However, the Examiner's attention is directed to such summaries of the previously cited references in the applicants' Amendment dated March 23, 2006. The entirety of such summaries in the march 23, 2006 Amendment are therefore fully incorporated hereinto by reference.

(i) Sakurai

Sakurai discloses that polyacetal resin compositions were investigated having excellent surface gloss and improved weather resistance without adversely affecting heat resistance, chemical resistance, fatigue properties and friction and wear resistance that are inherent to acetal resins (column 2, lines 17-24).

Sakurai discloses an acetal resin composition comprising (a) an acetal resin and (b) a low molecular weight polycarbonate compound having an intrinsic viscosity of 0.2 dl/g or less in methylene chloride at 25⁰C, wherein the acetal resin is present in an amount of 80 to 99.9 parts by weight and said low molecular weight polycarbonate

compound is present in an amount of 0.1 to 20 parts by weight per 100 parts by weight of the composition (claim 1).

According to Sakurai, in preparing an acetal resin composite material, it is preferable in some cases to add an amine-substituted triazine compound represented by the formula (III) and/or a cyanoguanidine compound represented by the formula (IV), and that these compounds of the formulae (III) and (IV), when used in combination with the polycarbonate compound, further increase adhesive strength of the acetal resin to the filler (column 5, lines 31-67).

As the amine-substituted triazine compound, Sakurai discloses, for example, guanamine, melamine, N-phenylmelamine, N-monomethylolmelamine, N,N'-dimethylolmelamine, and the like (column 6, lines 4-21).

Sakurai also discloses that the acetal resin composition or composite material may further contain known additives as disclosed in USP 4,087,411 such as a thermal stabilizer, e.g., polyvinyl pyrrolidone, hydrazide derivatives, amide compounds, a photo stabilizer, e.g., 2,4 dihydroxybenzophenone, 2- (2' -hydroxy- 5' -methylphenol) benzophenone, an antioxidant, e.g., hindered phenols such as 2, 6-di-tert-butyl-4-methylphenol, and the like, if desired, as long as these additives do not adversely affect the effects obtained in the invention (column 7, lines 11-21).

(ii) Auerbach

Auerbach discloses an oxymethylene polymer composition which comprises an oxymethylene polymer having incorporated therein a stabilizer comprising a major amount of a superpolyamide and a minor amount of benzoguanamine (claim 1).

Auerbach discloses that the stabilized oxymethylene polymer compositions are provided which exhibit a reduced tendency to form mold deposits upon molding, reduced tendency to discolor under thermal stress and maintain the low level of free

formaldehyde characteristic of superpolyaxnide-stabilized oxymethylene polymers and that the compositions comprise an oxymethylene polymer incorporated therein a superpolyamide stabilizer and a cyclic amidine costabilizer comprising a compound of the formula I (column 4 line 51 to column 5, line 7).

Auerbach also discloses that it was found that even at low levels of triazine costabilizer, such as benzoguanamine, relative to the superpolyamide, the stabilized oxymethylene polymer exhibits greatly reduced coloration under thermal stress and that it is quite unexpected that the addition of small levels of cyclic amidine costabilizer would improve coloration, maintain the low levels of extractable formaldehyde and maintain as well the low levels of mold deposit characteristic of oxymethylene polymer compositions stabilized with superpolyamides (column 5, lines 21-30). Moreover, Auerbach discloses that addition of the costabilizer may allow for a reduction in the superpolyamide component and, thus provide improvements in coloration and mold deposit in superpolyamide stabilized oxymethylene polymer compositions (column 5, lines 31-35).

(3) Patentability of the present invention over the cited references

All the cited references fail to disclose or suggest not only the specific guanamine compound having the specific group $-(CR^1R^2)_m-N-X$, but also the specific combination of such a guanamine compound, the polyacetal resin, the antioxidant, and the processing stabilizer and/or heat stabilizer as defined in the pending claims herein.

In this regard, applicants note that, although Harashina discloses a guanamine compound having a spiro ring, this spiro ring is clearly different from the amine residue in the **specific** guanamine compound in the present invention. Moreover, the other cited references disclose some guanamine compounds such as guanamine, benzoguanamine, methylganamine, and ethylenedimelamine. However, such guanamine compounds are also clearly **structurally different** from the above specific

guanamine compound employed in the present invention. Furthermore, it should be noted that the cited references describe the guanamine compound as being of the same level or equivalency to melamine. Thus, neither the specific guanamine compound of the present invention nor the above specific combination would be motivated from the cited references.

Applicants again note that the present invention shows unexpected results. That is, since Harashina essentially employs a specific spiro compound, which is structurally quite different from the specific guanamine compound having an amine residue, the effects achieved by the specific guanamine compound as claimed herein would never be predicted from Harashina. Moreover, since the other cited references employ a guanamine compound *having no residue of an amine compound*, the effect of the guanamine compound having the specific amine compound residue as claimed in the present application would never be predicted from therefrom.

Applicants further note that the newly cited Sakurai employs an amine-substituted triazine compound for the purpose of increasing adhesive strength. Thus, inhibition of HCHO emission would never be predicted from Sakurai. Furthermore, since Auerbach essentially employs major amounts of the superpolyamide, inhibition of HCHO emission would likewise never be predicted even if such a superpolyamide is not used.

In contrast to the applied prior art references, the present invention is embodied in a polyacetal resin composition which comprises a *specific* guanamine compound as defined in the pending claims. As such, formaldehyde emission is remarkably suppressed or inhibited. The present invention thereby inhibits mold deposits (i.e., the deposition of decomposition products on the mold) and blooming or bleeding of such products from a shaped article. Such results are clearly supported by the Examples and would never be predicted from the cited references.

HARASHINA et al
Serial No. 10/538,121
September 14, 2006

II. Conclusion

Every effort has been made to advance prosecution of this application to allowance. Therefore, in view of the amendments and remarks above, applicant suggests that all claims are in condition for allowance and Official Notice of the same is solicited.

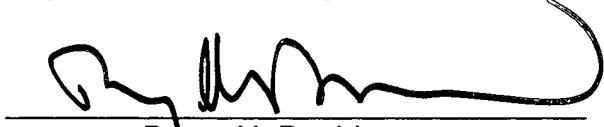
Should any small matters remain outstanding, the Examiner is encouraged to telephone the Applicants' undersigned attorney so that the same may be resolved without the need for an additional written action and reply.

An early and favorable reply on the merits is awaited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By:


Bryan H. Davidson
Reg. No. 30,251

BHD:bcf
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100